AMENDMENTS

Amendments to the Abstract:

Please replace the abstract with the following amended abstract:

A method and system is presented for treating moving target regions in a patient's anatomy by creating radiosurgical lesions. The method includes ~~Based on the CT scan data, a treatment plan is generated that defines the requisite beam intensities and paths. The position of the target region is determined in near real time. The composite motion of the target region, due to respiration and heartbeat, is tracked. Signals representative of the change (caused by the composite motion) in the position of the target region at a current time, compared to the position of the target region in the CT scan, are generated. In response, the relative position of the x-ray source and the target is adjusted, so as to account for the composite motion of the target. This process is repeated throughout the treatment. As a result, the x-rays are continually focused onto the target region in accordance with the treatment plan, while the x-ray source tracks the motion of the target region.~~ determining a pulsating motion of a patient separately from a determining of a respiratory motion, and directing a radiosurgical beam, from a radiosurgical beam source, to a target in the patient based on the determining of the pulsating motion. Directing the radiosurgical beam to the target may include creating a lesion in the heart to inhibit atrial fibrillation. The method may further include determining the respiratory motion of the patient, and compensating for movement of the target, due to the respiratory motion and the pulsating motion of the patient, in the directing of the radiosurgical beam based on the determining of the respiratory motion and the determining of the pulsating motion.